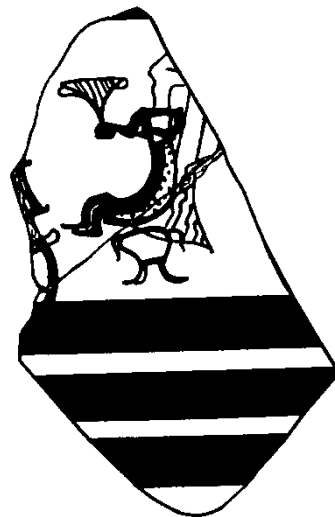


Our Cups Are Full: Pottery and Society in the Aegean Bronze Age

Papers presented to Jeremy B. Rutter
on the occasion of his 65th birthday

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Our Storerooms Are Full. Impressed Pithoi from Late Bronze/ Early Iron Age East Lokris and Phokis and their Socio-economic Significance

Bartłomiej Lis and Štěpán Růckl

ABSTRACT For various reasons, large storage vessels rarely attract the attention of pottery specialists. It is quite remarkable that prehistoric pithoi from the Greek mainland have not received a thorough treatment so far, in contrast to their Cretan or Cypriot counterparts. The article attempts to fill partially the gap and to show the potential of such a study for approaching wider issues of social, economic, and political developments of LBA/EIA Central Greece.

The majority of the pithoi derive from the site of Mitrou. Fragments from two other sites located nearby—the settlement of Kynos and the sanctuary at Kalapodi—complete our dataset. The outstanding characteristic of these pithoi is their size and decoration, consisting of designs made by impressions of a toothed tool. Macroscopic analysis of fabrics supports the existence of several workshops serving more than a single site. Various lines of interpretation of the distributional pattern and the sudden rise of this type of pithos (and pithoi in general) at the LBA/EIA transition are suggested and elaborated.

INTRODUCTION

One of the remarkable features of Jeremy Rutter's pottery studies has been their all-inclusive character.¹ Each functional category, no matter whether elaborately decorated tableware, ordinary cooking pots, or coarse pithoi, received appropriate attention and thorough treatment. We were lucky to discover the details of his approach not only from Jerry's numerous publications but also in a more intimate and practical way: at the pottery tables covered with material from Mitrou. Following the footsteps of our mentor and friend, we would like to concentrate upon a particular functional group of pottery, which is usually only cursorily

treated in studies dealing with pottery assemblages from the Greek mainland: large storage containers, the pithoi. Since the Mitrou Archaeological Project gave us the opportunity to meet and work with Jerry, the pithoi handled here derive mostly from Mitrou. The choice of time period is also not accidental as it is the transition from the Late Bronze to Early Iron Age where the fields of study of both authors overlap.

Prehistoric pithoi from the Greek mainland—unlike their counterparts from Crete or Cyprus (Christakis 2005, 2008; Pilides 2000)—have not received a thorough treatment so far. The only published work devoted solely to pithoi is an introductory article by T. Cullen and D.R. Keller (1990), which surveys the evidence for pithoi from the Neolithic period to historical times. In contrast, both the ethnographic evidence pertaining to pithoi production and distribution (Blitzer 1990), and more general treatment of storage and its socio-economic importance, are well represented in the literature (Halstead 1990; Halstead and O'Shea, eds., 1989; Margomenou 2008). This makes it even more evident that the gap in the knowledge of mainland pithoi is unjustified. This article's aim is to present and discuss some primary evidence which may stimulate further research on this subject.

¹ Acknowledgements: In the first place we would like to express our gratitude to Aleydis Van de Moortel and Eleni Zachou, directors of the MAP, for their invitation to study Mitrou ceramic material and permission to present some of the results here. We would also like to thank Caroline Belz for allowing us to present the unpublished data from the MAP survey. Of utmost importance for this article was the opportunity to examine pithoi fragments from other sites, and this could not have been possible without permission and kind support from F. Dakoronia and P. Kounouklas (Kynos), and R. Felsch and R. Catling (Kalapodi). We owe our thanks to Paul Halstead, Krzysztof Nowicki, Aleydis Van de Moortel and Salvatore Vitale for their comments. We are grateful to Tina Ross who drew all the pithoi fragments, inked them, and corrected the language. All remaining errors are the authors' responsibility. In addition, Bartłomiej Lis is thankful to the Foundation for Polish Science, which provided funding for his research in 2009.

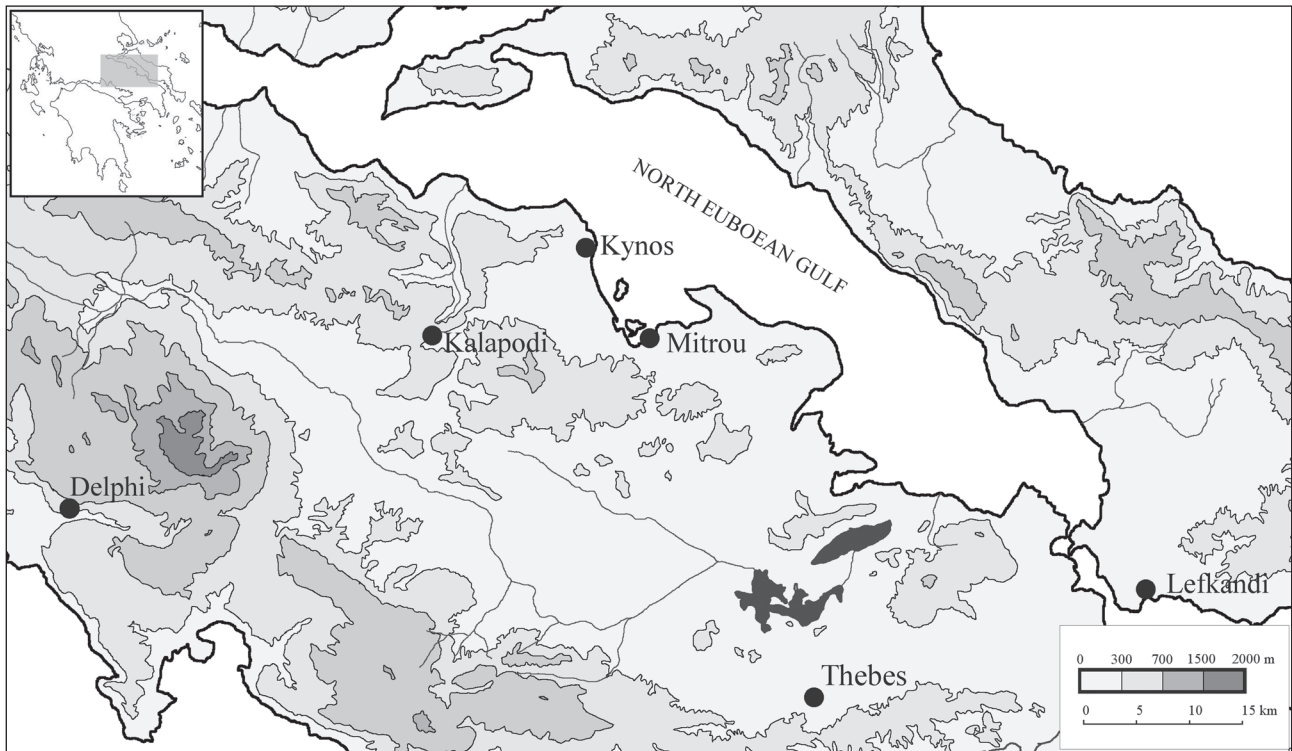


Fig. 1. Map of Central Greece showing most of the mentioned sites, by B. Lis.

The material presented below derives mostly from excavations and surveys at Mitrou and is supplemented by observations on pithoi fragments from two other sites located nearby—the settlement of Kynos and the sanctuary at Kalapodi (Fig. 1). The outstanding characteristic of these pithoi is their decoration, consisting of rows of impressed rectangles arranged in various schemes, usually placed on plastic bands encircling the body of the pithos (Figs. 2, 3). Due to this feature we will refer to them as Central-East Greek Impressed Pithoi (CEGIP).

DISCUSSION OF EVIDENCE

Mitrou

Mitrou is a site located in East Lokris (Fig. 1), excavated by the Mitrou Archeological Project (MAP) during 2004–2008 in a *synergasia* co-directed by Aleydis Van de Moortel and Eleni Zachou (Van de Moortel 2007, 2009; Van de Moortel and Zachou 2006). The site was previously surveyed in 1988–1989 as part of the Cornell Halai and East Lokris Project (CHELP; Kramer-Hajos and O’Neill 2008). Material presented here derives mainly from MAP activity (both excavation and survey, 24 and 11 pieces respectively), but six fragments from CHELP survey will also be presented.

Fabric

According to macroscopic analysis, three fabric groups can be tentatively differentiated among the fragments recorded during the summer of 2009.

The first and most common fabric group (Mitrou Fabric 1; 37 examples) can be subdivided into two subgroups. The first subgroup (1a) is characterized by the predominant presence of one type of sub-rounded/angular inclusions, which can be of red and/or dark brown/grey color (sometimes with greenish hue), depending probably on firing conditions and the location of a particular part of the surface in a kiln. The size of the inclusions can be anywhere up to 15 mm; the density is usually high and the sorting quite poor. There are also occasional rounded calcareous particles, reaching 10 mm in size. The second subgroup (1b) is characterized by the presence of two main inclusions. One is red in color, resembling the common inclusion of the first subgroup, while the other is dark green. The dark green inclusions are rounded to sub-rounded in shape and can have a shiny surface. Larger grains may show multiple fractures. They are very similar to rounded serpentinite fragments found frequently in local mudbricks. Additional rounded calcareous particles are sometimes present. Indeed, only proper petrographic analysis will be able to prove the distinction of these two subgroups correct. It is by no means excluded that we are dealing with a single fabric with serpentinite as the main inclusion. The color of the fabric (both subgroups) is within the range of 10YR 6/3–7/4 to 7.5YR 6/3–7/4 (pale brown/very pale brown to light brown/pink). The surfaces are usually cursorily wiped, and burnishing is rare.

The second fabric group (Mitrou Fabric 2; 3 examples) contains inclusions characteristic of subgroup 1a, yet there

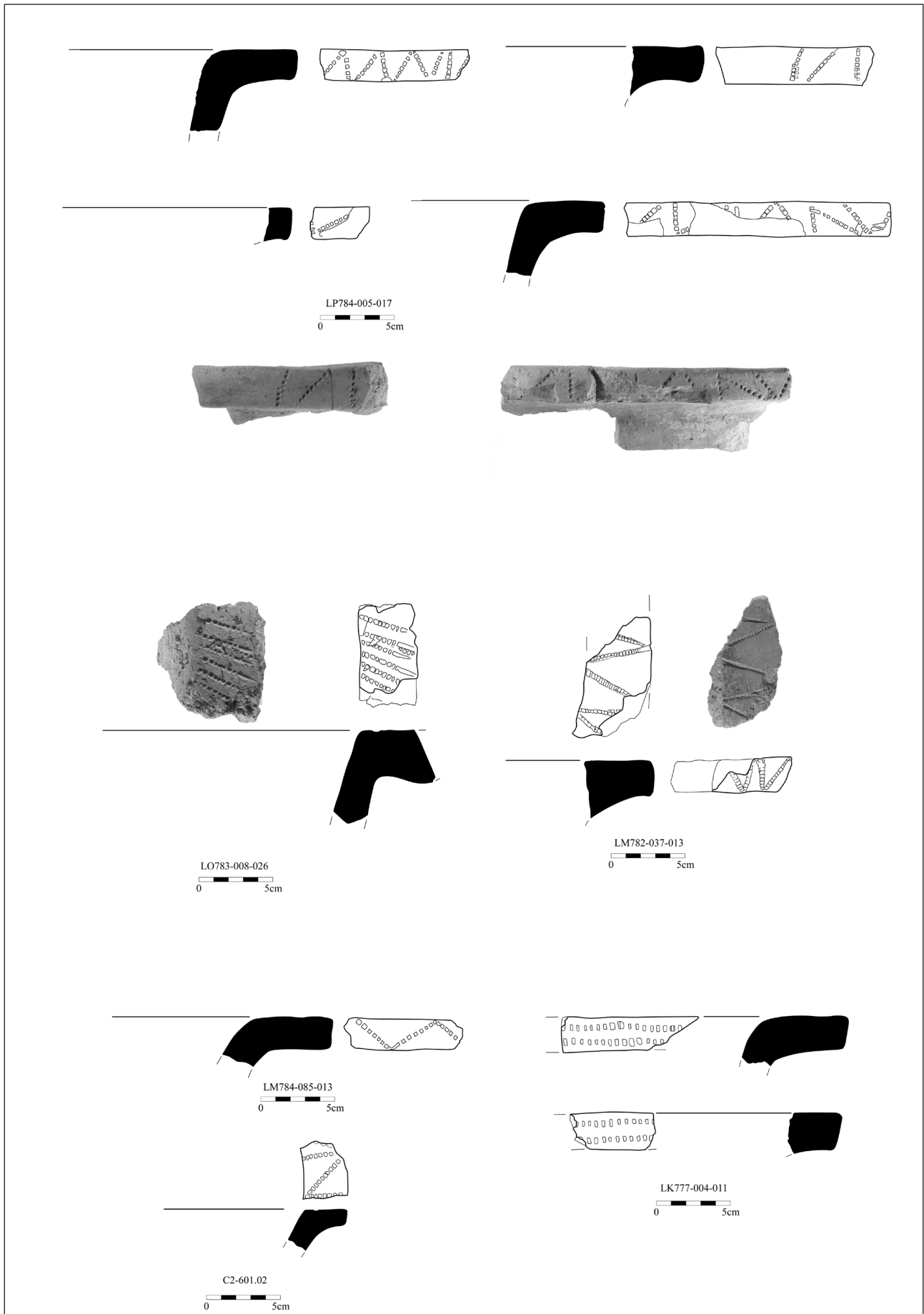


Fig. 2. Pithoi from Mitrou: decorated rim fragments. Drawings by T. Ross, photographs by B. Lis.

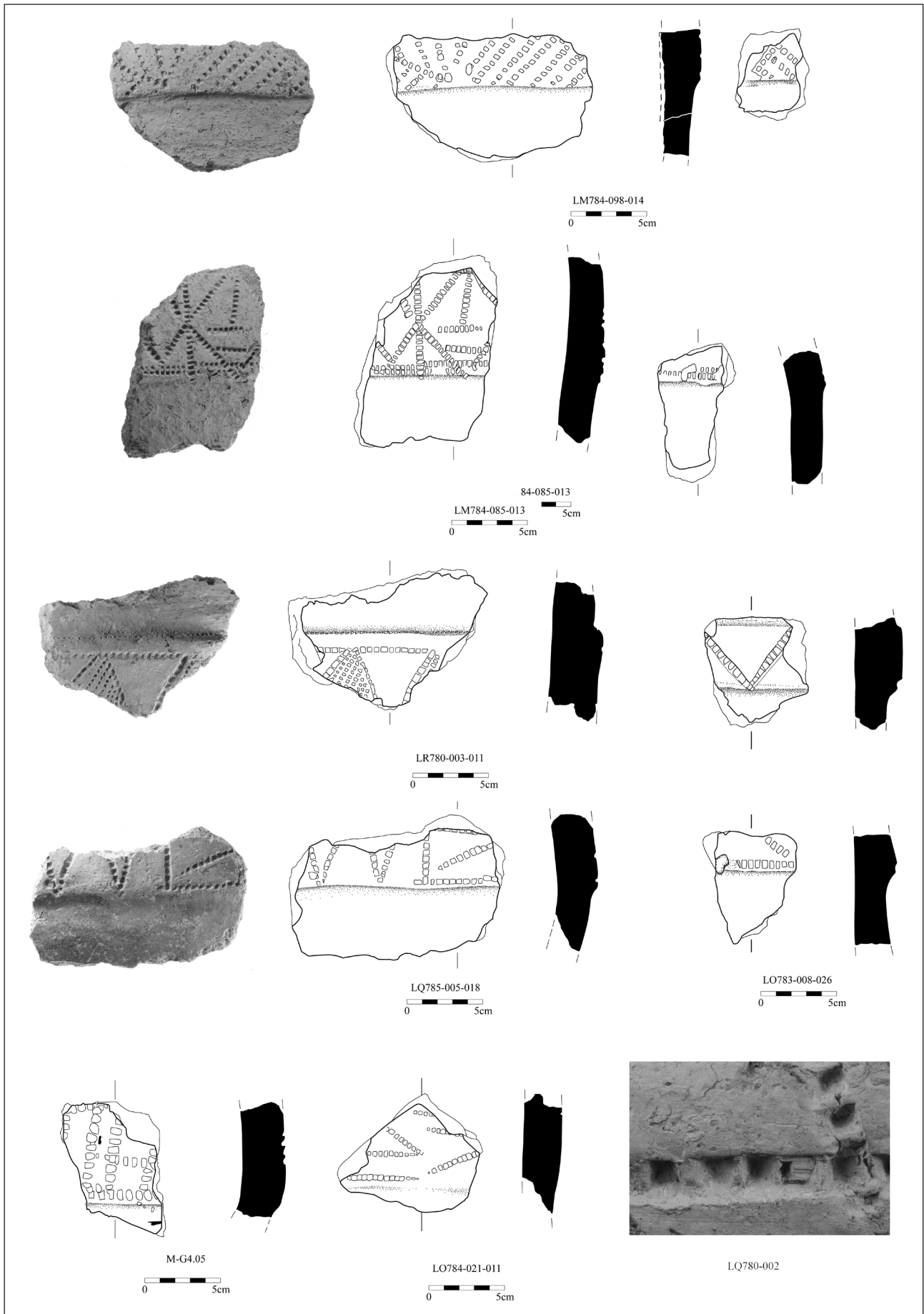


Fig. 3. Pithoi from Mitrou: decorated body fragments. Drawings by T. Ross, photographs by B. Lis.

is a substantial admixture of quartz. The color of the fabric is also consistently different (5YR 5/6, dark red).

The third fabric group (Mitrou Fabric 3) comprises only a single example from unit LO783-008. Its composition includes a combination of the usual dark red sub-angular/rounded grits, not exceeding 4 mm, and much larger rounded or sub-rounded fragments of paler red or orange color, sometimes heavily fractured in a way similar to fire-cracked stones. The color of the clay is not uniform (mostly 2.5YR 6/4, light reddish brown) and it seems that a slip (10YR 7/2–5/2, light grey – greyish brown) has been applied upon the darker exterior, a feature not observed in the previous two groups.

Decoration

The decoration of Mitrou pithoi is located either at the rim or on raised plastic bands with one single exception of decoration placed on the body (one fragment from unit LM782-036). The decoration on the rims (Fig. 2), due to the limited available space, is much simpler and more uniform. It consists usually of more or less regular zigzags placed on the vertical side, or in a few instances, on the flat top part of the rim. Other less frequent variants include parallel lines or parallel oblique rows.

Decoration on the plastic bands (Fig. 3) is difficult to assess fully as we are dealing with small fragments of a decorated zone that was once up to 3 m in length (based on dimensions of the Kynos pithos, see below)! Therefore, apart from the popular regular zigzags, the rest of the decoration appears as a rather irregular mixture of oblique, horizontal, and vertical impressed rows of elements. The general impression is of a lack of strict rules regulating the composition of decoration. Two horizontal lines often frame the main motif. One fragment should be mentioned due to its elaborate design. The popular zigzag is turned into a row of ‘hatched’ triangles by a simple fill ornament, which is executed with a different kind of tool with much smaller teeth (Fig. 3, LR780-003-011). The same tool is used to impress a continuous line on the narrow horizontal edges of the plastic band.

The decoration on Mitrou CEGIP is executed with a toothed tool, most probably comb-like (Jacob-Felsch 1996, 81), and the teeth are almost invariably rectangular in section. Because of the size of the widely-spaced teeth, one can exclude cosmetic combs (Buchholz 1984–85). As no possible candidates for such tools are known to us from pertinent periods, they must have been made of perishable materials. Decoration on fragment LQ780-002 (Fig. 3) has an impression of a broken tooth, which clearly shows that the material must have been wood. Only one fragment (C2-602.12) is impressed with an object whose elements are circular in section.

Dimensions

Due to the fragmentation of the Mitrou pithoi, there are only indirect indications as to their dimensions. Wall thickness is quite standardized and clusters around 2–2.5 cm, suggesting that we are dealing with large specimens. Only in a single instance, LP784-005-018 (Fig. 2), was it possible to estimate a rim diameter at ca. 60 cm.

Distribution, Chronology, and Frequency

The distribution of impressed pithoi at Mitrou is dispersed. Pithoi deriving from excavations were found only in trenches that exposed major LH IIIC and PG structures (northeast area). The picture can be enlarged by incorporating the results of the MAP survey. There are a few areas in which surface finds of impressed pithoi tend to concentrate (Fig. 4). These concentrations are well correlated with clusters of PG pottery identified by Štěpán Růckl (2008) and interpreted by him as possible locations of PG houses.²

Good correlation with PG houses provides a general chronological framework for Mitrou pithoi. Furthermore, several excavated fragments derive from contexts with fairly secure dating. Two fragments were found within a small LH IIIC Late deposit in trench LM784, marking the reuse of part of Building F (Vitale 2008). Four pithoi fragments derive from a fill accumulated over Building G, which is mostly EPG in date but probably contains quite a number of LH IIIC Late fragments as well.

It is of some importance that the two major MPG/LPG structures at the site, Buildings A and E (Van de Moortel 2009), did not yield fragments of such pithoi from their main deposits. The only pithos found in situ in Building A has plain plastic bands and its fabric is different from that of CEGIP. A few CEGIP pieces were found in the fill above Buildings A and E, but the fill also contained fair amounts of EPG pottery. Thus, summing up the evidence, the dating of Mitrou impressed pithoi appears to be quite restricted, ranging between LH IIIC Late and EPG.

Nothing can be said at the moment about the frequency of Mitrou CEGIP. Nevertheless, our macroscopic analysis has tentatively shown that most of the recorded fragments belonged to different vessels (ca. 30). Considering the long use-life of large pithoi, the number of CEGIP used simultaneously in the settlement of Mitrou must have been substantial.

² The study of the MAP survey pottery is still in progress. Most of the units from the central and northeast part of the island have been analysed for the presence/absence of PG pottery, as opposed to the northwest part from which no data is currently available for the EIA ceramic distribution. However, all the units from the entire surveyed area were searched for the presence of the CEGIP fragments.

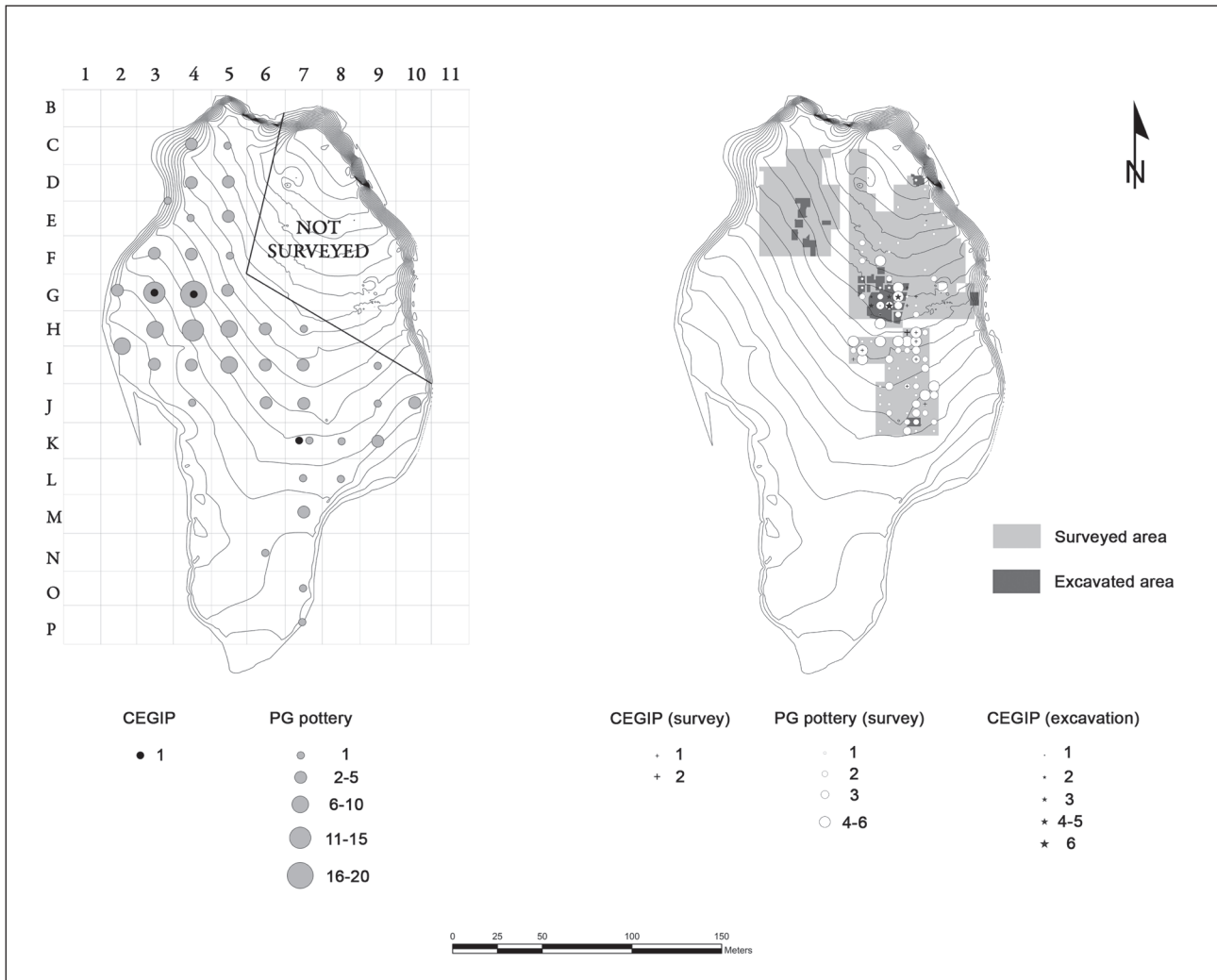


Fig. 4. Distribution of CEGIP fragments and PG pottery at Mitrou from the Cornell Halai and East Lokris Project (left) and the Mitrou Archeological Project (right), by Š. Rückl.

Kalapodi

Kalapodi is a sanctuary site located in East Phokis, on the passageway from the Kephissos Valley to the Bay of Atalanti (Fig. 1).

Fabric

Interestingly, almost every fragment belonging to CEGIP was made in a fabric that closely matched Mitrou Fabric 1. A similar opinion regarding the uniformity of Kalapodi fabrics was expressed by the publisher of the material (Jacob-Felsch 1996), who assigned all but one fragment (No. 262, Layer 10) to the clay type 304.

Homogenous fabric is a strong indicator of a single workshop supplying Kalapodi with pithoi. Another class of pottery present at Kalapodi, the so-called *Küchengeschilder*, may provide a strong case for the location of this workshop in the vicinity of the sanctuary. This group consists mostly of larger closed and open shapes (amphoras, kraters, and large bowls), which were executed in a clay described as a

finer version of the pithos clay (clay types 211–217; Jacob-Felsch 1996, 78–80). The frequency increase of this pottery class coincides with the appearance of CEGIP and a rise in the general occurrence of pithoi (Table 1). It is, therefore, quite possible that the workshop supplying pithoi also produced much of this undecorated utilitarian ware. Lack of substantial amounts of such pottery at Mitrou may suggest that this workshop was located closer to Kalapodi.

Frequency and Chronology

Kalapodi seems to offer a unique possibility to study the frequency of pithoi diachronically (Tables 1, 2). However, it is difficult to interpret the quantitative data in a straightforward way. Pithoi have a much longer use-life than other ceramic containers and we do not know the variability of depositional processes (periodical destructions, ritual breakage, ordinary discard, etc.) that created the analyzed assemblages. Furthermore, the excavated area was extremely limited. We will, therefore, refrain from imposing too much of an interpretation on this data. It suffices

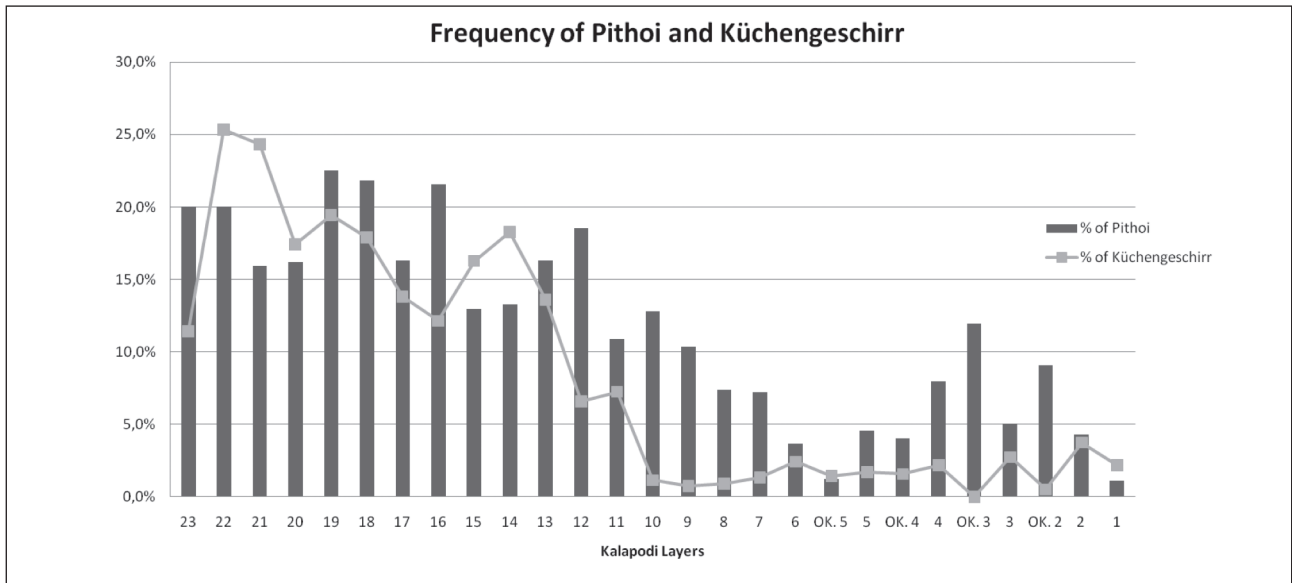


Table 1. Frequency of pithoi and *Küchengeschrirr* from Kalapodi.

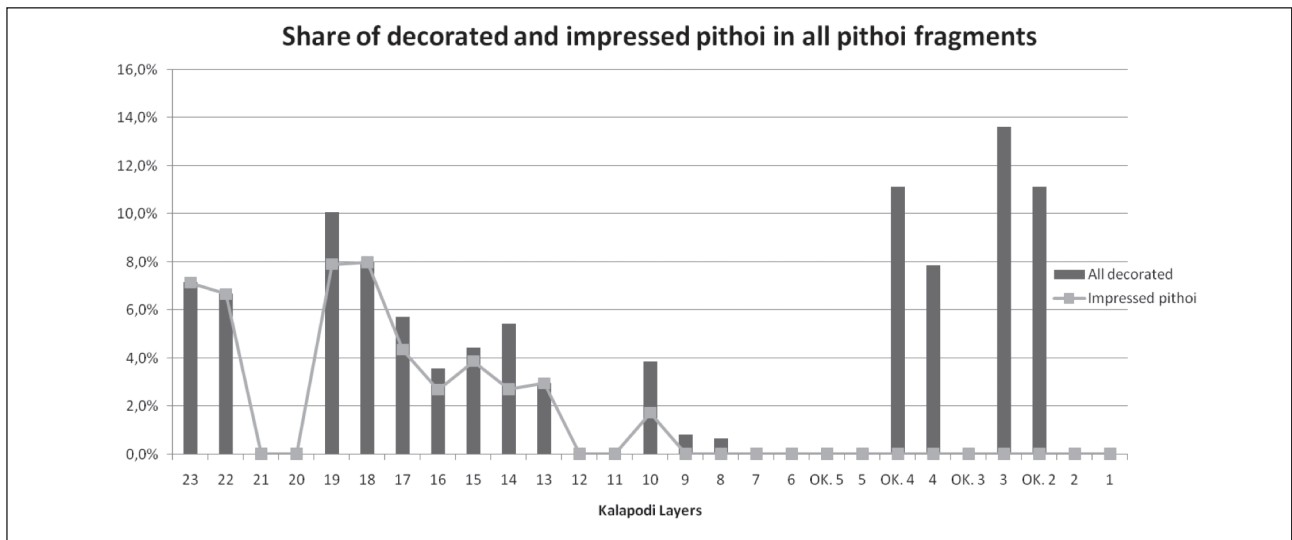


Table 2. Share of all decorated and impressed pithoi in all pithoi fragments from Kalapodi.

to mention that the frequency of pithoi towards the LBA/EIA transition is high and displays an increasing trend (Table 1), and this trend appears to be correlated with the appearance of impressed decoration and its rising popularity (Table 2). Finally, low rates of mendability for pithoi might suggest that the fragments derive from a substantial number of vessels.

The CEGIP appear for the first time in Layer 10 (Table 2), the last layer belonging to LH IIIC Middle. From Layer 13 onwards, that is, from the very end of the LBA, we can talk of a constant and strong presence of CEGIP. In this respect, chronological evidence from Kalapodi matches very closely that presented for Mitrou. Layers 16–23 mark the apex of pithoi frequency at Kalapodi, and by that time CEGIP are the dominant type of decorated pithos.

Material from layers 24–28 (dating to EPG/MPG, see Lis 2009) was only preliminarily published (Nitsche 1987) and none of the CEGIP were shown, yet our brief study revealed beyond any doubt that they were still present. Layer 28 ends with fire destruction, which left pithoi fragments and grain remains spread over an area of 40 m² (Felsch 2001), and at least some of these pithoi belonged to CEGIP. Moreover, the CEGIP are in use later also (at least in Layer 29), but the full chronological range cannot be established without a thorough study.

Decoration

The decoration of all the Kalapodi pithoi has been divided into seven variants (Jacob-Felsch 1996, 81–2); the last one, Variant 7, represents the decoration of CEGIP (Table 2).

In general, the decoration of CEGIP from Kalapodi is very similar to that from Mitrou. There are, however, some small differences that are worth mentioning. Among the motifs, the 'oblique ladder' (Jacob-Felsch 1996, 152, no. 288, fig. 39) and the filled zigzag (Jacob-Felsch 1996, 167, no. 425, fig. 45) do not seem to be attested at Mitrou. The decoration of no. 262 (Jacob-Felsch 1996, 150, fig. 38) is exceptional. It consists of intersecting diagonals, sometimes placed within metope-like patterns. More importantly, the decoration is made up of smaller and rather oval impressions, in contrast to the standard bigger and rectangular ones. This decoration, executed probably with an ordinary cosmetic comb, has parallels from sites outside of the discussed region (see below).

Another different decoration at Kalapodi is a narrow plastic band, semicircular in section, usually applied below the rim and covered with oblique rows of impressions (Jacob-Felsch 1996, 166, no. 414, fig. 45 and a few unpublished pieces from later contexts).

Among the unpublished material, there are two types of impressed decoration that are neither attested in layers 10–23 nor found at Mitrou, and might be therefore chronologically significant (i.e. later than EPG; personal examination on 10/08/2009 thanks to a kind permission of R. Felsch and R. Catling). These include a zigzag of a double row of impressions, and decoration (usually a zigzag) placed in two horizontal zones on a plastic band.

Dimensions and Shape

Discussion of pithoi dimensions is handicapped for the same reasons as in the case of Mitrou, namely the fragmentary preservation. The wall thicknesses match the examples from Mitrou; they seem to cluster around 2–2.5 cm, with a couple of thicker fragments (up to 3 cm). Another indirect piece of evidence for the size of these vessels is provided by fragment no. 262 (Jacob-Felsch 1996, 150, fig. 38), the largest decorated pithos sherd from Kalapodi. Despite its dimensions, the horizontal curvature is minimal, suggesting a very large vessel (wall th. 2.5 cm). Moreover, M. Jacob-Felsch (1996, 80) observes that feature sherds constitute a very small percentage of all pithoi fragments (ca. 98% of pieces belong to wall fragments). It is another indication of the substantial size of the pithoi.

The general shape is not restorable. The rims are similar to Mitrou impressed rims, and the bases of Kalapodi pithoi (but not necessarily those belonging to CEGIP) are of a simple flat type.

Kynos

Kynos, located on the coast some 16 km north of Mitrou (Fig. 1), is potentially an important site for the whole re-

gion in the period under discussion. The site is characterized both by the unique preservation of finds and exceptional stratigraphy for the LBA/EIA transition.

Two phases of Kynos settlement, phases 7 and 6, are dated to LH IIIC Middle and Late respectively and separated by an earthquake destruction. These phases provide evidence for complexes of storage rooms. A storage room, dated to phase 7, contained clay bins and two large pithoi (Dakoronia 1986, 68–69, fig. 69; 1989, 171, fig. 59δ; 2003, 38, 45–47). One of these vessels, now guarding the entrance to the Atalanti Museum, has three plastic bands around the neck and belly. The middle one, at the maximum diameter, is decorated with a wavy band and impressions of shell. It has a pointed base, its height can be estimated at ca. 160 cm, and the rim diameter is slightly over 50 cm. The decoration of other pithoi deriving from these layers includes incised zigzag, rows of opposing diagonals, and impressed circles. The decorative repertoire was thus very similar to that current at contemporary Kalapodi (Jacob-Felsch 1996, 80). Interestingly, pithoi found in LH IIIC Late strata have no decoration apart from plain plastic bands.

At least one example of the typical CEGIP has been found at Kynos, yet it derives from a contaminated layer. This is a seemingly large pithos (judging by the thickness of the wall) decorated with plastic bands. One of these bands is decorated with impressed rectangles arranged in rows. The fabric and careful surface treatment do not have much in common with Kalapodi material or the main group from Mitrou. The fabric looks, however, similar to that of the small group of quartz-bearing fabric from Mitrou (Fabric 2), yet this is a tentative identification. A fabric similar to the main Kalapodi-Mitrou group (Mitrou Fabric 1) has been noticed among the LH IIIC Middle examples.³

SUMMARY OF PRIMARY EVIDENCE

Nearly 100 pithos sherds have been included in the present study. Due to the highly fragmentary state of the material, it is virtually impossible to reconstruct impressed pithoi in their entirety, but some common characteristics are evident.

CEGIP feature sharply out-turned squared rims, which can reach at least 60 cm in diameter. This and other indications of size suggest we are dealing with large vessels, probably not smaller than the LH IIIC Middle pithos from Kynos (with a capacity of ca. 500 litres). Little can be said about the bases. The bases of Kalapodi pithoi (but not necessarily belonging to CEGIP) are wider and flat. The pithoi

³ Information presented in this section derives from the cited works and personal communication with Dr. F. Dakoronia and P. Kounouklas as well as examination of Kynos material on 08/08/2009, thanks to a kind permission from Dr. F. Dakoronia.

probably had up to three plastic bands, but it is impossible to say whether all of them were decorated.

The decoration of CEGIP, on plastic bands and rims, was applied by pressing a toothed tool against the clay when still wet. In most cases, the tool can be tentatively identified as a wooden comb, probably used in textile production (weaving comb). The decoration is extremely varied but similar simple rectilinear designs such as zigzags do appear at all three sites. In this sense, there are no readily distinguishable differences between Mitrou, Kynos, and Kalapodi.

The fact that the pithoi were decorated, and in a quite time-consuming manner, is of particular significance. They were not treated as purely utilitarian containers, but rather as important object of display, embodying or manifesting owners' ideas and intentions in relation to the goods stored in them. Irrespective of what interpretations can be advanced for the CEGIP's appearance (see below), it is obvious that there had to be something more than a sole desire to store surplus; the surplus must have been manipulated for certain social or political goals.

Two main fabrics (Mitrou Fabric 1 and 2) were identified in the material, with few outliers. Mitrou Fabric 1 is a dominant group at Mitrou and, in fact, the only one attested in Kalapodi. For Kynos it is difficult to assess fabric frequencies, but Mitrou Fabric 2, rare at Mitrou, seems to dominate. Given the differences between the two fabrics, we may tentatively interpret these phenomena as being the result of two different technological traditions, that is two different pottery workshops. From the current knowledge of the CEGIP, we suggest that the production center of pithoi in Mitrou Fabric 1 was probably located close to Kalapodi, while pithoi of Fabric 2 were produced closer to the coast, perhaps at or around Kynos (Fig. 1).

SIMILAR PITHOI FOUND ELSEWHERE

The earliest examples derive from LH IIIC Advanced contexts at Tiryns (Kilian 1981, 158, fig. 9 lower left) and Thebes (Andrikou 2006, 156, fig. 90, no. 347). Both display elaborate designs, yet the single elements are more rounded and distinctly smaller than most of the examples from Kalapodi or Mitrou. Nevertheless, the most elaborate design from Kalapodi (Jacob-Felsch 1996, no. 335, layer 17, EPG) is executed with the same kind of tool, probably a true cosmetic comb.

An enormous storage vessel from Delphi (Lerat 1961, 362–366, figs. 48–50) provides evidence for the earliest application outside of the core region of a tool similar to the one used for the majority of CEGIP. The accompanying krater suggests a date in the LH IIIC Late period (Mountjoy 1999, 792, no. 297; Jung 2006, 188, n. 1353). The pithos decoration

is complex, combining plastic, incised, and impressed motifs. The plastic bands, semi-circular in section, are incised with oblique strokes. The large horizontal band has impressed horizontal lines, while other bands, of curvilinear course, are impressed with wheel-shaped objects and rows of small rectangles. An apparently zoomorphic design is covered with impressed rectangles as well. Another pithos fragment from Delphi (Perdrizet 1908, 20, fig. 93) looks exactly like examples from Kalapodi and Mitrou (a close parallel is LO784-021-011, Fig. 3), but cannot be dated with any precision.

Surprisingly, the heyday of impressed pithoi in Central-East Greece is not accompanied by any finds of similar pithoi from outside of the core region. The only roughly contemporary find comes from Asine (PG Phase 3, Wells 1983, 252), but it is a fragment of a handmade amphora.

A real *floruit* of impressed pithoi finds is connected with the Middle and Late Geometric period. They are reported from Lefkandi (Popham, Sackett, and Themelis, eds., 1980, pls. 42.50, 58.335), Corinth (Middle Geometric well, Pfaff 1988, 66, 68, pl. 30, nos. 76, 82), Tiryns (Late Geometric well, Kilian 1978, 457, fig. 13), and Argos (Geometric, Courbin 1966, pl. 106). Given the current state of research, it is impossible to provide any secure explanation for the appearance of impressed pithoi in the Geometric period.

Our Storerooms Are Full—of What?

Archaeological data shows clearly that a wide range of products can be stored in pithoi. Neither Mitrou nor Kynos provide us with direct evidence but various types of botanical remains have been identified in Kalapodi. In LH IIIC levels the majority belongs to cereals and pulses. The richest evidence comes from the so-called 'Opfergetreide' dated to the MPG/LPG (layer 28, date after Felsch 2001, 194 and Nitsche 1987; see also Lis 2009 for a slightly earlier dating) period where a large amount of cereals and pulses has been found scattered among numerous fragments of pithoi (Kroll 1993; Felsch 2001). Olives and grapes are only meagerly represented (Kroll 1993, 172–174, table 3) but the data should be treated with great caution due to the low archaeological visibility of liquids such as olive oil and wine (Hamilakis 1996, 2–3).

Contrary to the archaeological record, the ethnographic evidence seems to favor liquids as the most probable candidates. Christakis (2005, 65) reports that in 44% of recorded cases on modern Crete pithoi were used to store olive oil, in 30% cereals and pulses, and in 17% wine. Moreover, modern Cretan farmers prefer wooden containers for wine due to the alleged effect of the clay turning the beverage into vinegar (Christakis 2005, 65). Since the use of wooden barrels seems to be a rather late phenomenon (Christakis 2005, 65), we may suppose that in prehistory

clay pithoi were used to store wine on a far larger scale than the pre-modern and modern data would suggest. As we shall see, however, the scale of production of olive oil, and quite possibly wine, is historically contingent, so that the ethnographic data cannot be safely applied to antiquity (Forbes 1993).

INTERPRETATION OF THE DATA

Introduction

In order to interpret the evidence gathered so far, one has to set a proper background by summarizing briefly the history of the use of large pithoi on the Greek mainland. There seems to be a close correlation between the degree of socio-political complexity and the presence and frequency of large pithoi. The first peak in pithos history coincides with the EH II period, when there is a large body of evidence for the movement of goods, including a developed sealing system. Many sites produced huge pithoi, some of them decorated with seal impressions (Wiencke 1970). During EH III and the whole of the Middle Helladic period the intensity of pithos use follows the general socio-economic stagnation. There are very few examples of large pithoi in settlement contexts, among which House 311B at Pefkakia clearly stands out (Maran 1992). Surprisingly, the earlier part of the LBA, which witnessed the formation of the Mycenaean elites, does not provide much evidence for the storage of large amount of staples in pithoi. The evidence, however, might be obscured by later activities at the most important sites. A rise in the use of large pithoi may be associated with the palatial period, although in comparison with palatial Crete (Christakis 2005) and even the non-palatial EH II period, the evidence is meager. Among the palatial sites, only Pylos provides substantial evidence for storage, such as pithoi holding oil behind the Megaron and pithoi in the Wine Magazine. Neither Mycenae nor Tiryns can boast a multitude of large pithoi. At Mycenae, there are only two houses outside of the citadel, the Houses of the Oil and Wine Merchant, that yielded a significant number of large pithoi (Cullen and Keller 1990, 193). The last revival of Mycenaean culture during LH IIIC Middle, and the associated rise of local elites, left its stamp on the use of pithoi. Large pithoi are known from two rooms at Lefkandi (S and N Rooms in Trial IV/V, Evely, ed., 2006) and the storeroom at Kynos (see above) but the quantities are not impressive.

The presented evidence stresses a connection between the accumulation of surplus and power. Therefore, it is rather surprising to find a substantial number of large, decorated pithoi in Central-East Greece during a period which is rarely, if ever, associated with established elites and for which a concept of economic prosperity seems inadequate. We think that this mismatch between evidence and expectations constitutes a thrilling research question and in the

following section we try to outline possible solutions.

1. Increased Measures against Crop Failure (Storage as Risk-buffering Strategy)

Direct storage of agricultural surplus from good years is one of the measures against crop failure in bad ones. Storing surplus is essential for traditional farming societies, especially for those living in environments with high seasonal and inter-annual climatic variability like Greece (see, e.g., Gallant 1989). However, in traditional peasant societies such as the modern and pre-modern agriculturists in Greece, households usually do not limit their precautions to direct storage. For example, diversification and exchange are equally important risk-buffering mechanisms. Moreover, direct storage has its own limitations due to the restricted 'shelf-life' of the produce so that the surplus stored may be wasted in the course of a few years (Halstead 1989, 79; 1990). It has been documented that Greek farmers often aim to store at least a two-year supply of grain; only the few wealthiest farmers in west Thessaly stored enough to ensure safety for up to five years (Forbes 1989, 93; Halstead 1990, 151–2). Nevertheless, given the fact that the storage life of foodstuffs is short and unreliable in the long term, there must be a threshold above which storage will not repay the costs involved and this mechanism will lose its applicability (Halstead and Jones 1989, 52). In Greece, it seems to be a general pattern to invest or sell rather than store any surplus above a two-year supply (Gallant 1989; Halstead 1981, 1989, 1990; Halstead and Jones 1989, 52; O'Shea 1981).

It cannot be stressed enough that the relevance of data generated by cultural anthropologists and ethnoarchaeologists in relation to ancient societies is far from straightforward (Forbes 1992; Halstead 1987). However, as Halstead pointed out, "[m]any of the hazards faced in the recent past will always have afflicted farmers in Greece, and indeed in the Mediterranean as a whole," although he emphasizes that some of the hazards and farmers' responses are historically contingent (Halstead 1990, 160). Nevertheless, some of the risk-buffering strategies such as the importance of livestock for indirect banking of surplus seem to be well documented by archaeological and textual evidence, especially in the case of Mycenaean and Minoan palatial economies (Halstead 1990, 160). Taking into consideration the short storage life of foodstuffs and the fact that high seasonal and inter-annual climatic variability must have always affected farmers in Greece, indirect storage was probably one of the crucial survival strategies of past peasant societies. Therefore, we would argue that the appearance of substantial number of decorated pithoi (and possibly the increase of pithoi in general) identified at the sites of Kalapodi and Mitrou is unlikely to be explained by an intensification of direct storage.

2. 'Market' Model

In the discussion of the historical pattern of olive oil production in the Ermionis area in the north-eastern Peloponnese, Forbes (1993) has shown convincingly that there were marked differences in the scale of olive cultivation in the past 300 years. Far from being a constant feature of the Ermionis, the production seemed to be dependent on at least four developments in the area as well as in the Mediterranean in general: population pressure, improvement of pressing technology, existence of a substantial mercantile fleet, and the appearance of new market possibilities. Since we cannot assess the demographic history of our area, and taking into consideration the fact that any significant improvement in processing technology is highly unlikely, we have to concentrate on the possibility of the appearance of new marketing opportunities that could stimulate the intensification of agricultural production. What could this new market be?

The fall of the Mycenaean palatial centers gave rise to new political and economic configurations that triggered a growth of "decentralised maritime trading activity" and "opportunistic trading in small vessels by interstitial and peripheral groups" (Sherratt and Sherratt 1991, 373). As the Sherratts argued elsewhere, "[f]undamental to this new pattern was the dissociation of trading activity in high value materials from the control of the state" (Sherratt and Sherratt 1993, 361). These 'high value materials' must have been primarily metals but could have included olive oil and wine as well, both substances controlled to a large extent by palatial elites in the preceding period (Hamilakis 1996, 1999). It is obvious that during LH IIIC there emerged new opportunities for both producers and merchants to capitalize on luxury crops such as olives and vines, if only the demand was strong enough.

For understanding the historical context, it is important to visualize the geographical setting of the three sites under study. Both Mitrou and Kynos are situated on the coast of the Euboean Gulf and Kalapodi is located on an important land route connecting the Euboean Gulf to the Kefissos Valley and the Corinthian Gulf. The Euboean Gulf was an important trade route at least since Early Bronze Age (Agouridis 1997; Papageorgiou 2009), connecting Thessaly and Northern Greece to the South. The prosperity of LH IIIC–PG sites along the coast of the Euboean Gulf is a sign of the growing importance of the route now frequented by private traders, quite possibly from the east Mediterranean (Sherratt and Sherratt 1991, 374–375 and n. 23; Crielaard 2006). The commodities sought were primarily metals such as silver (Attica), copper, and possibly gold (Northern Aegean), and it is no coincidence that it is along this route that we find some of the earliest Near Eastern imports of the post-palatial period (Perati, Lefkandi, Thasos; see Sherratt 1994). If the nature of the LBA mari-

time trading activities was, as suggested, characterized by tramping from port to port over short distances (loading and unloading local commodities along the way; Sherratt and Sherratt 1991, 357), then the sudden overproduction of low-bulk foodstuffs such as olive oil or wine, rather than grain and pulses, would make sense. It is quite possible that the appearance of CEGIP and the possible increase of the pithoi in general at the LBA/EIA transition is the result of intensified production stimulated by the appearance of new marketing opportunities in the form of new and growing trade interests in the Aegean area.

3. Rise of the Elites

Although, as mentioned above, extensive storage facilities in Aegean prehistory correlate well with persons or groups that we might call elites, there is no *direct* and *straightforward* relationship between the two. Whether the appearance of CEGIP can be related to the rise of elites able to mobilize agricultural labor and appropriate the surplus in exchange for security or the like, we have to look at other data and search for evidence that would support the existence of elite groups on the sites.

Building B at Mitrou, constructed probably in LH IIIC Middle or slightly later and much disturbed during the PG period and by modern deep ploughing, was more than 9 m long with a wall thickness ranging from 0.7 to 0.8 m. The building is by far the most impressive LH IIIC structure excavated at Mitrou so far (Van de Moortel 2009). Its successor, apsidal Building A, was probably constructed in the second part of EPG, but by that time the CEGIP were most likely no longer in use at Mitrou. Out of several EPG tombs uncovered at the site, only one or two can be classified as rich, but they did not contain any truly luxurious grave goods. This meager evidence for the existence of elites is further weakened by the dispersed distribution of pithoi as detected by Růckl (2008). Clearly, even if elites existed, the data does not support centralized storage, nor any kind of control over the distribution of CEGIP.

It has been claimed that Kynos during LH IIIC Middle was a seat of local power and a possible redistributive center (Deger-Jalkotzy 2002, 57; Crielaard 2006, 281). Evidence supporting this notion includes the existence of complexes of storage rooms (also in LH IIIC Late), pictorial kraters with possible self-representation of the elite (Dakoronia 1999; 2002), and evidence for industrial activity (pottery kiln and metal-smelting oven; Dakoronia 1988, 43, 224; 1989, 171; 1991, 194–5; Blackman 1999, 73–4). There is a good deal of continuity into the PG period attested in architecture and other finds at the site, but it is unclear how this translates into the continuity of power. Two large complex rectangular structures with several rooms are assigned to Kynos 5 and 4 (Dakoronia and Konouklas 2009; for the

chronological position of these phases, see Lis 2009). Despite the fact that the buildings are much disturbed and that the excavation area of the settlement is nothing but a small sample, their size and complexity seem to point to substantial structures of high importance.

In terms of architecture, Kalapodi has not produced anything impressive, yet the excavation was extremely limited spatially. Rich cult-related evidence, including a possible shrine later replaced by an altar, suggests that the excavated area belonged to a sanctuary (Felsch 2001). However, chamber tombs dated to the LH IIA/B–LH IIIC period have been found at the nearby village of Kalapodi (Dakoronia and Dimaki 1998; Livieratou 2009, 959). This evidence perhaps indicates that the site may have included both sacral and settlement structures at the same time.

It is interesting to note that the LH IIIC levels at Kalapodi contained unmistakable evidence for bronze production in the form of casting debris and waste products such as slag (Felsch, ed., 2007, 243). Even though the value of bronze may have declined in this period in the East Mediterranean in favor of iron (Sherratt 1994), it still has to be regarded as a low bulk luxury material in Mainland Greece. We believe that it is not a coincidence that a control over bronze production and possibly also over the distribution of the finished products is attested at a site where feasting activities were performed and an ever increasing amount of surplus was manipulated.

4. Mobilization of Surplus under the Auspices of a Religious Center

The evidence for the rise of elites in the surveyed area at the transition from LBA to EIA is not particularly plentiful. Here, we would like to offer another explanation, which has its focus on Kalapodi and its role as a sanctuary.

We have very little knowledge as to the economic and political organization of sanctuaries at the end of LBA or the beginning of EIA. It is not impossible that the sanctuary of Kalapodi was permanently organized even at an early stage, as suggested by the presence of architectural remains, the possible existence of a settlement nearby, and the apparently significant use of large and durable containers. The more permanent the establishment at Kalapodi was, the more probable it is that a fixed personnel, with its own hierarchy, existed and exercised control over the ritual and other activities of the sanctuary. This personnel could have been independent or under the control of a secular establishment. Whatever the case was, it is possible that ritual and religious ideology were used not only for their primary aims, but also in order to exercise control over the local population and its resources (for the possibility of a similar use of ritual for control in palatial Crete, see Christakis 2008, 140; Wright 1995, 347).

The rural location of Kalapodi, in between the coastal plain of Atalanti and the Kephissos valley, makes it a proper place for festivals connected to an agricultural calendar, a possibility further strengthened by finds of carbonized cereals in PG layers (Felsch 2001). Staple commodities like grain or pulses might have been gathered during such festivals as a tribute for the gods. The appearance of necessary tribute might have bolstered the agricultural production of an average household, possibly increasing the risk of not meeting the consumption needs every year, as the surplus above the normal consumption would not be kept for household use. In such cases, the sanctuary could have functioned as the final resort for troubled households, making it a kind of redistribution center. Of course any such event would increase the dependency of the local population on the sanctuary and the controlling elite (for an extensive discussion of such a scenario in a different socio-political setting, see Halstead 1989). If Kalapodi was indeed involved in such activities, the possible location of a pithos production center nearby is no longer surprising.

What would be the reason behind the presence of many such pithoi at Mitrou, with a dispersed distribution pattern? There are several possibilities; the simplest one would presuppose that inhabitants of Mitrou profited from the existence of a workshop in their vicinity and supplied themselves with large pithoi. However, we would like to advance an alternative hypothesis. If Kalapodi held a strong position in the region and built a network of subordinate settlements, Mitrou might have been one of them. Pithoi might have been prestigious gifts, or certificates of particular relation (or donations made) to the sanctuary. Alternatively, they could have held content that was considered the ‘property’ of the sanctuary connected with its specific, possibly economic, interests.

CONCLUDING REMARKS

In this short presentation of our study we have attempted to present CEGIP as they appeared to us—a fascinating and unexpected phenomenon, provoking one to rethink ideas about the LBA–EIA transition on the Greek mainland once again. We also wanted to show how rewarding a study of non-fine ware ceramics can be.

On the interpretative side, there was no intention to give any kind of final answer. Rather, we attempted to outline a number of different possibilities, or scenarios. Of course, some of them appeared to us more compelling than others, and the ‘center of gravity’ has moved considerably in the course of the study. Our final conclusion is that a combination of the four presented scenarios is the most plausible one in light of the current stage of research. Nevertheless, we would like to favor scenarios centered on the existence of an elite (at Kynos) with Kalapodi as the possible seat of a religious

establishment, and that these institutions played the most important roles in the developments described above. We are anxiously looking forward to new developments in the archaeology of Phokis and East Lokris, which will give us the opportunity to perform new tests for our ideas

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